

### **R E M A R K S**

Reconsideration of this application, as amended, is respectfully requested.

#### **THE CLAIMS**

\_\_\_\_\_ Claim 1 has been amended to recite the feature of the present invention whereby the monitor photodetector is disposed outside the substrate except on the one surface side of the substrate on which the optical waveguide is formed.

In addition, the claims have been amended to make some minor grammatical improvements and to correct some minor antecedent basis problems so as to put them in better form for issuance in a U.S. patent.

No new matter has been added, and it is respectfully requested that the amendments to the claims be approved and entered.

#### **THE PRIOR ART REJECTION**

Claims 1-11 were rejected under 35 USC 103 as being obvious over USP 6,587,604 ("Yamauchi"). This rejection, however, is respectfully traversed with respect to the claims as amended hereinabove.

According to the structure of the present invention as recited in amended claim 1, a radiant light beam which is

radiated from the multiplexing point of a multiplexing optical waveguide to the outside of a substrate through the inside of the substrate is received by the monitor photodetector disposed outside the substrate except on one surface side of the substrate. As recited in claim 1, in order to secure a space outside the substrate for mounting the monitor photodetector, the output optical waveguide is formed with a deformation such that at least one of the optical axes of two radiant light beams in a substrate facet is apart from the edge of the output optical waveguide by a predetermined distance. With this structure, the radiant light beam is transformed into an electric current by the monitor photodetector, and the value of this electric current can be used to find the optimum bias point of a DC bias voltage by a bias power supply DC.

By contrast, Yamauchi discloses a structure in which an optical-spot conversion part 23 is provided between an optical modulator 26 and an optical absorption layer 24, and wherein a monitor photodetector 27 is provided on the surface of the substrate 21A above the optical absorption layer 24. See Fig. 7 of Yamauchi. According to the teachings of Yamauchi, providing the optical-spot conversion part 23 realizes an efficient optical coupling between the optical modulator 26 and the optical absorption layer 24, and also between the optical modulator 26 and the monitor photodetector 27. See column 6, lines 20-63 of Yamauchi.

Accordingly, it is respectfully submitted that the structure disclosed in Yamauchi and the structure of the present invention as recited in amended claim 1 are completely different from each other in terms of the arrangement of the monitor photodetector and in terms of the operation of the monitor photodetector (i.e., the kind of light received by the monitor photodetector).

And it is respectfully submitted that Yamauchi does not at all disclose, teach or suggest the features of the present invention as recited in amended claim 1 whereby the monitor photodetector is disposed outside the substrate except on one surface side of the substrate, and whereby the output optical waveguide is formed with a deformation such that at least one of the optical axes of two radiant light beams in a substrate facet is apart from the edge of the output optical waveguide by a predetermined distance in order to secure a space outside the substrate for mounting the monitor photodetector.

Accordingly, it is respectfully submitted that the present invention as recited in amended claim 1 and claims 2-11 depending therefrom clearly patentably distinguishes over Yamauchi under 35 USC 102 as well as under 35 USC 103.

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Entry of this Amendment, allowance of the claims and the passing of this application to issue are respectfully solicited.

If the Examiner has any comments, questions, objections or recommendations, the Examiner is invited to telephone the undersigned at the telephone number given below for prompt action.

Respectfully submitted,

/Douglas Holtz/

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